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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/956,903	09/21/2001	Thomas D. Fletcher	2207/11270	2661
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KENYON & KENYON LLP 1500 K STREET N.W. SUITE 700 WASHINGTON, DC 20005			EXAMINER DO, CHAT C	
			ART UNIT 2193	PAPER NUMBER
			MAIL DATE 01/11/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	09/956,903		FLETCHER, THOMAS D.	
	Examiner		Art Unit	
	Chat C. Do		2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 20, 21 and 23-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14, 20, 21, 23, 24 and 32 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 25-31 is/are rejected.
- 7) ☒ Claim(s) 33-35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment filed 11/13/2007.
2. Claims 1-14, 20-21, and 23-35 are pending in this application. Claims 1, 4, 10, 20, 25, and 32 are independent claims. In Amendment, claims 15-19 and 22 are cancelled and 32-35 claims are added. This Office Action is made final.

Claim Objections

3. Claims 33-35 are objected to because of the following informalities:

Re claims 33-35, these claims depend on the cancelled claims 16-18 respectively.

These claims should depend on claims 32-34 respectively.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 25-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant

Art Unit: 2193

art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Re claim 25, the newly added limitation "wherein a drain of each of transistors is connected to one of a drain of another of the transistors, the first output and the second output" is not fully support in the original specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed. As seen in Figure 1 of the corresponding claimed invention, the second and fourth transistors of the first evaluation block does not meet the above newly added limitation because the drain of the second and fourth transistors are not connected to either a drain of another of the transistors, the first output and the second output as required by the claim.

Thus, claims 26-31 are also rejected for being dependent on the rejected base claim 25.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 4-9 and 25-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Winters (U.S. 6,466,960).

Re claim 4, Winters discloses in Figures 1 and 3 an apparatus (e.g. carry-save adder 10 in Figure 1) comprising a differential domino carry generate circuit (e.g. Figure 3A as carry circuit, col. 3 lines 4-11, and col. 4 line 64 to col. 5 line 10) having a first evaluation block of switches (e.g. as transistors 25 as switches in Figure 3A as the first evaluation block of switches) and a second evaluation block of switches (e.g. as transistors 26 as switches in Figure 3A as the second evaluation block of switches), wherein the first evaluation block and second evaluation block each have the same number of switches connected in parallel (e.g. there are three parallel set of transistors in each blocks 25 and 26 in Figure 3A) and each have the same number of switches connected in series (e.g. there are two series set of transistors in each blocks 25 and 26 in Figure 3A), and wherein the circuit (e.g. circuitry in Figure 3A for producing carry signals) also has a true carry generate output (e.g. carry signal 29 in Figure 3A) and a compliment carry generate output (e.g. compliment carry signal 31 in Figure 3A) which both have an output drive strength (e.g. for driving the next circuit in line ZD 14 in Figure 1), and wherein the output drive strength for true output is the same as the output drive strength for compliment output (e.g. inherently as CARRYL is complemented version of CARRYH in Figure 3A and col. 5 lines 10-18).

Re claim 5, Winters further discloses in Figures 1 and 3 the switches in the first evaluation block and second evaluation block (e.g. transistors 25 and 26 in Figure 3A) are N-channel metal-oxide semiconductor (NMOS) transistors (e.g. col. 5 lines 1-10 and lines 34-41 for transistors 25 and 26).

Re claim 6, Winters further discloses in Figures 1 and 3 corresponding transistors in the first evaluation block and second evaluation block are the same size (e.g. there are five same transistors as NMOS for both block 25 and 26 in Figure 3A).

Re claim 7, Winters further discloses in Figures 1 and 3 the apparatus further comprises cross-coupled P-channel metal-oxide semiconductor (PMOS) keeper transistors (e.g. transistors 27-28 in Figure 3A).

Re claim 8, Winters further discloses in Figures 1 and 3 the differential domino carry generate circuit is a first stage in a carry look-ahead adder (e.g. stage 12 in Figure 1).

Re claim 9, Winters further discloses in Figures 1 and 3 the differential domino carry generate circuit is a group generate gate (e.g. Figures 1 and 3).

Re claim 25, Winters discloses in Figures 1 and 3 method (e.g. operation of circuitry in Figure 1 and 3B) comprising: receiving at a first evaluation block (e.g. all transistors 25 in Figure 3A) three true input values (e.g. AH, BH, and CH signal respectively as three true input values); receiving at a second evaluation block (e.g. all transistors 26 in Figure 3A) three compliment input values (e.g. AL, BL, and the last AL should be CL as noted with reference for correction in Figure 3A), wherein the compliment input values are the compliment of the true input values (e.g. col. 5 lines 10-18); processing the compliment input values at the second evaluation block to provide a carry generate value at a first output by selecting one of a plurality of stacks of transistors in the second evaluation block (e.g. output signal 31 as carry generate value by evaluated all the transistors 26 in Figure 3A), wherein each of stacks of transistors connects a

current input to the first output (e.g. each stack of transistor {AL,BL}; {AL should be CL,AL}, and {BL} connects a current by the transistor 33 to the output signal 31 in Figure 3A); and processing the true input values (e.g. all true signals AH, BH, and CH are input respectively into the transistors 25 in Figure 3A) at the first evaluation block to provide the compliment of the carry generate value at a second output (e.g. output signal 29 in Figure 3A) by selecting one of plurality of stacks of transistors in the first evaluation block (e.g. switching on/off the transistors 25 in Figure 3A), wherein each of stacks of transistors connects current input to the second output (e.g. each stack of transistor {AH,BH}; {CH,AH}, and {BH} connects a current by the transistor 33 to the output signal 29 in Figure 3A), and wherein the first evaluation block and second evaluation block have the same number of stacks of transistors (e.g. there are total three stack of transistors in each block 25 and 26 in Figure 3A), and further wherein a drain of each of transistors is connected to one of a drain of another of said transistors, the first output, and the second output (e.g. does not support in the specification; Figure 3A).

Re claim 26, Winters further discloses in Figures 1 and 3 the first evaluation block and second evaluation block have corresponding stacks that have the same number of transistors (e.g. there are five transistors in each block 25 and 26; there area also three stack of transistors level in each bock 25-26 as seen in Figure 3A).

Re claim 27, Winters further discloses in Figures 1 and 3 the method further comprises: receiving a clock (e.g. CLOCK signal 32 in Figure 3A) having a precharge phase and an evaluation phase; providing precharge values at the first output and at the second output during precharge phase; and providing the compliment carry generate

value at the first output and the carry generate value at the second output during the evaluation phase (e.g. output signals 29 and 31 respectively in Figure 3A).

Re claim 28, Winters further discloses in Figures 1 and 3 the method further comprises preventing current from passing through the current input during the precharge phase and enabling current to pass through the current input during the evaluation phase (e.g. Figure 3A).

Re claim 29, Winters further discloses in Figures 1 and 3 the method further comprises: providing the output from the first evaluation block to a keeper (e.g. output of transistors 25 into the transistor 27 in Figure 3A), providing the output from the second evaluation block to a keeper (e.g. output of transistors 26 into the transistor 28 in Figure 3A); and providing the carry generate true output (e.g. output signal 31 in Figure 3A) and carry generate compliment output (e.g. output signal 29 in Figure 3A) during the evaluation phase based upon output from the first evaluation block (e.g. block of transistors 25), second evaluation block (e.g. block of transistors 26), and the keeper (e.g. block of transistors 27-28).

Re claim 30, Winters further discloses in Figures 1 and 3 the inputs received and outputs provided are symmetrical (e.g. Figure 3A).

Re claim 31, Winters further discloses in Figures 1 and 3 the first evaluation block has three stacks of transistors (e.g. transistors 25 in Figure 3A wherein first stack {AH,BH}, the second stack {CH, AH}, and third stack {BH} in Figure 3A), and wherein the second evaluation block has three stacks of transistors (e.g. similarly transistors 26 in

Figure 3A wherein first stack {AL,BL}, the second stack {AL as should be CL, AL}, and third stack {BL} in Figure 3A).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winters (U.S. 6,466,960) in view of Wickman et al. (U.S. 6,952,297).

Re claim 1, Winters discloses in Figures 1 and 3 an apparatus (e.g. carry-save adder 10 in Figure 1) comprising a symmetric differential domino carry generate circuit (e.g. Figure 3A as carry circuit, col. 3 lines 4-11, and col. 4 line 64 to col. 5 line 10) having true inputs with a first load and compliment inputs with a second load (e.g. true inputs as AH, BH, CH and compliment inputs as AL, BL, CL as seen in Figure 3A and col. 5 lines 10-18 wherein the suffixed H and L represent or symbolize the true and complemented input signal respectively); noted the "AL" label for transistor 26 should be "CL" for correction as seen in Pfennings (U.S. 4,667,303)).

Winters does not explicitly define or illustrate the load for the true inputs is equal to the load for the compliment inputs. However, Wickman et al. explicitly disclose that the load for the true inputs is equal to the load for the compliment inputs (e.g. col. 3 lines 7-14 and col. 4 lines 42-45).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to have the load for the true inputs is equal to the load for the compliment inputs as clearly taught in Wickman et al.'s invention into Winters' invention because it would enable to improve the speed of producing the resultant (e.g. col. 1 lines 25-33 and col. 1 lines 36-51).

Re claim 2, Winters further discloses in Figures 1 and 3 the circuit also has a true carry generate output (e.g. signal at point 29 in Figure 3A) and a compliment carry generate output (e.g. signal at point 31 in Figure 3A) which both have an output drive strength (e.g. for driving the next circuit in line ZD 14 in Figure 1), and wherein the output drive strength for true output is the same as the output drive strength for compliment output (e.g. inherently as CARRYL is complemented version of CARRYH in Figure 3A and col. 5 lines 10-18).

Re claim 3, Winters further discloses in Figures 1 and 3 the circuit further a first evaluation block having a plurality of transistors (e.g. all transistors 25 in Figure 3A), wherein a number p of transistors are connected in a parallel relationship (e.g. p is equated to 3 as transistors AH & BH are in parallel with transistors CH & AH and transistor BH in Figure 3A) and a number s of transistors are connected in a serial relationship (e.g. s is equated to 2 as transistor AH is series with transistor BH in Figure 3A); and a second evaluation block having a plurality of transistors (e.g. all transistors 26 in Figure 3A), wherein in the second evaluation block p transistors are connected in a parallel relationship and s transistors are connected in a serial relationship (e.g. similar structure as seen on the left side as first evaluation block in Figure 3A).

Allowable Subject Matter

10. Claims 10-14, 20-21, 23-24, and 32 are allowed.
11. Claims 33-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Amendment

12. The amendment filed 11/13/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The newly added limitation "wherein a drain of each of transistors is connected to one of a drain of another of the transistors, the first output and the second output" is not fully support in the original specification. Thus, this newly added limitation is considered as new matter introduces into the original disclosure.

Applicant is required to cancel the new matter or clearly address the support of these newly added limitations in the original specification in the reply to this Office Action.

Response to Arguments

13. Applicant's arguments filed 11/13/2007 have been fully considered but they are not persuasive.

- a. The applicant argues in page 12 for claim 1 that the cited reference fails to disclose limitations cited in claim 1, particularly the load for true inputs is equal to the load for the compliment input as cited in the claimed invention.

The examiner respectfully submits that the technical definition of compliment input is inversed of the input. Thus, the load of input would be exactly the same as the load of the compliment input wherein the input drives the logic with its positive level (e.g. as an example only) and the compliment drives the logic with its negative/zero level (e.g. as corresponding example only). The primary reference clearly discloses all the limitations cited in claim 1, but the secondary reference is used to clearly and expressively show the proof that load of input signal and the load of complement signal are same. See and compare Figure 3A of cited reference and Figure 1 of claimed invention for distinction. These two Figures are very very similar EXCEPT the connection of the source of the fifth transistor.

- b. The applicant argues in page 12 first paragraph for claim 25 that this claim should be allowed for similar reason as argued in claim 10.

The examiner respectfully submits that claim 25 does not have all the similar limitations of claim 10, particularly the fifth transistor connection/structure of connection as cited in claim 10. Thus, claim 25's rejection is maintained as clearly addressed in the above rejection.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2193

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chat C. Do
Examiner
Art Unit 2193

January 10, 2008

A handwritten signature in black ink, appearing to read 'Chat C. Do', with a large, stylized loop at the end.